

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of

Amendment of Parts 2, 15, and 97 of the
Commission's Rules to Permit Use of
Radio Frequencies Above 40 GHz for
New Radio Applications

ET Docket No. 94-124
RM-8308

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**REPLY COMMENTS OF THE
CONSUMER ELECTRONICS MANUFACTURERS ASSOCIATION**

The Consumer Electronics Manufacturers Association ("CEMA"), a sector of the Electronic Industries Association, hereby replies to the comments that were filed in response to the Second Notice of Proposed Rulemaking ("*Second Notice*") in the above-captioned proceeding on May 28, 1996.¹ In its *Second Notice*, the Commission solicited comments on, among other things, the need to develop and codify a spectrum etiquette to prevent interference among unlicensed devices operating in the newly allocated 59-64 GHz band. The initial comments in this proceeding reflect serious doubts about whether such a need exists. As set forth more fully below, CEMA similarly questions the wisdom of a Commission-imposed "etiquette standard" for this unlicensed spectrum. The Commission instead should allow industry to develop a voluntary etiquette, or different etiquettes, and CEMA is willing to establish a forum in which representatives from diverse organizations and interests groups can work towards this goal.

¹ See *Amendment of Parts 2, 15, and 97 of the Commission's Rules to Permit Use of Radio Frequencies Above 40 GHz for New Radio Applications*, First Report and Order and Second Notice of Proposed Rulemaking, ET Docket No. 94-124, FCC 95-499 (released Dec. 15, 1995). Unless otherwise specified, references to comments herein are to those filed in this proceeding on May 28, 1996.

I. INTEREST OF CEMA

CEMA is the principal trade association of the consumer electronics industry. CEMA members design, manufacture, import, export, distribute and sell a wide variety of consumer electronics equipment, including television receivers and various types of unlicensed communications devices such as cordless telephones, intercom systems and cordless speaker systems. As evidenced by the Commission's decision to allocate the 59-64 GHz band to unlicensed uses, unlicensed communications devices are becoming increasingly prevalent in businesses and homes, and will become more pervasive as technology advances. CEMA's member companies are actively involved in the development of advanced unlicensed equipment, particularly such home-use devices as wireless home automation systems. CEMA and its member companies have a long history of working with industry to develop voluntary standards and, where appropriate, with the Commission to develop technical standards for codification in the Commission's rules.² CEMA also routinely participates in Commission proceedings to develop operational rules for unlicensed devices, seeking guidelines that foster the development of products which maximize consumer value.³ CEMA and its members therefore have a significant interest in the outcome of this proceeding.

² One of CEMA's ongoing efforts is the development of industry standards for unlicensed home automation systems which use spread spectrum technology. *See* EIA Home Automation System Standard, IS-60 (and in particular, IS-60.04, Part I, describing a node communications protocol).

³ CEMA formerly was known as the Consumer Electronics Group of the Electronic Industries Association.

II. A MANDATORY SPECTRUM ETIQUETTE IS UNNECESSARY AND WOULD NEEDLESSLY AND PREMATURELY CONSTRAIN THE USE OF THE 59-64 GHz BAND

The *Second Notice* recognizes that the Commission has traditionally not required spectrum etiquette standards for unlicensed devices, "believing that they [are] unnecessary and could restrict the development of new technology."⁴ In its comments, Metricom, Inc. -- a member of the Millimeter Wave Communications Working Group ("MWCWG") -- concurs with this principle and, thus, opposes the adoption of a spectrum etiquette standard.⁵ CEMA also concurs with this general principle as it applies to unlicensed devices.

Commission-imposed technical standards are most appropriate where spectrum is set aside for *specific* services. Such standards can ensure that the service in question develops quickly, with minimal interference among users. Commission-imposed etiquettes for certain unlicensed devices may also be appropriate where the Commission seeks to develop particular classes of devices, such as unlicensed PCS devices.⁶ Such considerations, however, do not apply to "general purpose" unlicensed spectrum, which can be used by a myriad of devices capable of meeting diverse consumer and business needs. In such circumstances, the Commission should allow equipment manufacturers to explore new RF techniques and develop new applications, unhindered by rigid or otherwise unnecessary spectrum etiquettes.

⁴ *Second Notice* at ¶ 64.

⁵ *See* Comments of Metricom, Inc. at 1-2.

⁶ *See Notice* at ¶ 64 *citing* Second Report and Order, GEN Docket No. 90-314, 8 FCC Rcd 7700 (1993).

The need for flexibility is particularly great with respect to the 59-64 GHz band. The *Second Notice* recognizes that this spectrum is extremely well-suited for a wide variety of unlicensed, broadband applications. Because of oxygen absorption effects, propagation (and therefore the potential for interference) will be extremely limited in this band.⁷ These characteristics, in combination with the power limitations governing all Part 15 devices, suggest that the major source of potential interference will be intra-system.⁸ This phenomenon should allow each system designer to choose the best protocol for its desired application. Thus, the unique RF properties of the 59-64 GHz band -- which, to date, have been explored to only a limited degree -- offer manufacturers truly extraordinary opportunities to be creative.

In the consumer electronics field, CEMA envisions devices with sophisticated home automation capabilities, consumer electronics "buses," and other in-home distribution services operating in this band. The full potential of this spectrum, however, is just not known. The most efficient etiquette may very well vary with different applications. For example, "bursty," packetized data may require a certain channel access etiquette, while longer, real-time file transfers may require another. The number of nodes on the system and the expected traffic also will likely influence the choice of etiquette.

The Commission should not presuppose that the band will be used by devices that conform to a single etiquette, particularly when the properties and potential of the band are just beginning to be explored. The band contains a large amount of spectrum, and its potential uses should not be limited by unnecessary operating constraints. Indeed, because the band will

⁷ See *id.* at ¶ 33.

⁸ See *id.* at ¶ 64 n.72.

support the use of highly concentrated devices, the band ultimately could support numerous, compatible standards and etiquettes. Industry should be free to develop these standards and etiquettes over time and, necessarily, be in a position to accommodate new applications and techniques.

Cutler-Hammer, Inc. has expressed these same concerns in assessing the possible constraints which a spectrum etiquette standard would impose on the electronic sensor industry. This manufacturer of sensors variously notes that "etiquette standards tailored to [one] type of technology will not necessarily be appropriate for other possible applications in the band"; that any spectrum etiquette "must be flexible enough to accommodate a wide range of applications"; and that ultimately "market forces [should] determine what services are made available."⁹

It should also be noted that, if a single etiquette (or limited number of etiquettes) were imposed by the Commission, the cost of producing compliant devices could impede the development of low-cost devices. "Etiquette complying" devices necessarily will be more complex and thus more expensive to produce. Today, consumers greatly benefit from the minimal costs imposed by Part 15 of the Commission's rules and the freedom it affords manufacturers to produce a full range of products at a broad array of price points. The Commission should avoid unnecessarily restricting this market dynamic.

⁹ See Comments of Cutler-Hammer, Inc. at 3, 5 & 9.

III. THE COMMISSION SHOULD RELY ON INDUSTRY TO DEVELOP A VOLUNTARY ETIQUETTE, OR ETIQUETTES, FOR THIS NEWLY ALLOCATED SPECTRUM

In its comments, Hewlett-Packard emphasizes that operational standards in this band should be "flexible enough to allow as many applications as possible to co-exist in the band, and to easily accommodate future technologies as they emerge."¹⁰ Yet, the company asserts that certain common *rules* are necessary to promote harmonious use of the band.¹¹ The MWCWG, which is chaired by Hewlett-Packard, expresses similar views.¹²

Of course, CEMA is sensitive to manufacturers' concerns that the 59-64 GHz band not become the resting place for vast populations of competing, incompatible devices (even though the odds of this occurring seem remote at present). CEMA regularly has urged the Commission to improve the conditions under which Part 15 devices operate, either by making additional spectrum available or by enhancing the status of Part 15 devices within existing allocations.¹³ In this instance, however, the proponents of a Commission-mandated etiquette have not made their case. Nothing in the comments provides any reasonable justification for departing from the Commission's longstanding practice of allowing standards for unlicensed

¹⁰ See Comments of Hewlett-Packard Company at 4.

¹¹ See *id.* at 8.

¹² See Comments of Millimeter Wave Communications Working Group at 4 ("it may be necessary to have rules or mechanisms to ensure harmony for all operators").

¹³ See, e.g., Comments of Electronic Industries Association/Consumer Electronics Group, PR Docket No. 93-61 ("*Regulations for Automatic Vehicle Monitoring Systems*") (May 24, 1995); Comments of Electronic Industries Association/Consumer Electronics Group, ET Docket No. 94-32 ("*Allocation of Spectrum Below 5 GHz Transferred From Federal Government Use*") (Mar. 20, 1995).

spectrum to evolve over time, at the industry's direction and to meet the evolving needs of consumers, service providers and manufacturers.

Instead of mandating a standard at a time when the plans for the 59-64 GHz band are yet to be developed, CEMA urges the Commission to allow industry to work towards developing voluntary standards and etiquettes. In this regard, CEMA stands ready to bring together as wide a group of equipment designers and manufacturers as possible to develop consensus protocols (if they prove necessary) which will support an assortment of applications and accommodate future uses. CEMA has been developing standards and transmission etiquettes for decades and, in the process, has acquired significant expertise in developing consensus solutions to technical issues among disparate industry interests. These efforts have included resolving the concerns of an increasingly diverse community of manufacturers. If the Commission decides that it is important to have a voluntary etiquette developed within the one-year period suggested in the *Second Notice*, CEMA will work within that time frame.¹⁴

¹⁴ See *Second Notice* at ¶ 64.

IV. CONCLUSION

For all of the foregoing reasons, CEMA requests that the Commission not require the development of, nor adopt, a spectrum etiquette standard for the 59-64 GHz band.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Marc Berejka, certify that a copy of the foregoing "Reply Comments of the Consumer Electronics Manufacturers Association" was mailed, first class postage prepaid, this 27th day of June, 1996 to the parties listed below.



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